Cost Analysis Methodology at the IRC

Until recently, humanitarian organizations have not routinely used cost data to compare the cost-efficiency or cost-effectiveness of different interventions and program delivery models. As a result, policy makers and practitioners have had little data to inform decisions on the allocation of financial resources for humanitarian response. With better information about the cost-efficiency and cost-effectiveness of our interventions, the IRC is better able to understand how and why costs vary across contexts to maximize the impact of each dollar spent to improve our clients' lives.

The IRC conducts cost-efficiency and cost-effectiveness analyses of key interventions to inform program and advocacy decisions around the best use of resources. Cost-efficiency analyses are used to compare the costs of a program, or set of activities, to the number of clients provided with services (e.g., children treated for acute malnutrition, students reached with a new pedagogy). Cost-effectiveness analyses (CEAs) are conducted concurrently with our research team's impact evaluations. CEAs compare the cost of a set of activities to the change in outcomes for clients (e.g., reduction in mortality, improvements in child literacy).

Cost-efficiency and cost-effectiveness data enables practitioners to make comparisons across programs to understand how various implementation approaches and context affects program cost and impact. With enough cost evidence from different countries, we can understand how context affects the costs of delivering services, which enables better planning and budgeting for humanitarian responses. Because the goal of such analyses is comparative, it is necessary to use a consistent methodology for cost analysis of humanitarian interventions.

There are many resources on the appropriate methodology for estimating the costs and cost-effectiveness of social programs[i,ii], including several articles on social programs in low-income countries.[iii,iv] Existing literature outlines the decisions that organizations must address when conducting cost analyses. It is important to note that the same set of decisions must be applied uniformly to all analyses to enable a comparative analysis. Different interventions produce different outputs (goods or services provided by humanitarian programs) potentially requiring different metrics. For example, we calculate the cost per dollar transferred to beneficiaries in cash transfer programs whereas we calculate the cost per person-year of latrine access for latrine building programs. Despite the difference in outputs, the humanitarian sector must be able to compare costs across intervention types and contexts. To do so, the IRC bases its costing methodology on Levin and McEwan's Ingredients Method.[ii]

This guidance note outlines the methodology that the IRC uses to conduct cost analyses of its humanitarian projects.

1. Determining the Goal of the Analysis

The learning objectives of the cost analysis should guide the analysis process. The first step of determining the learning objective is to decide upon the output or outcome in question. For instance, consider a latrine-building program in a camp setting. What decision-making process, or learning objective, is a cost analysis aiming to influence? If the technical team is looking to compare the costs of latrine-building across a three-year program, analyzing the cost per latrine built per year meets the analysis objective. However, if the goal of the analysis is to compare the impact of household latrines against community-run latrines, analyzing the cost per averted mortality through a cost-effectiveness analysis would be more appropriate.

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Once the output or outcome is decided upon, the analysis requires a clear definition of which activities will be included. For instance, would an emergency malnutrition treatment program consider the costs of mass screenings led by community health workers (CHWs) as a necessary input to the program? While mass screenings are a separate activity from direct malnutrition treatment, screenings aid in increasing coverage of treatment and almost all acute malnutrition treatment programs include screenings and outreach. Questions like these emerge in each analysis. **It is extremely important to have a common understanding of which activities contribute to which outputs, and what costs are included in each activity. Working in close consultation with technical and program staff, the IRC applies clear standards for the costs included or omitted for every analyzed program.**

The activities agreed upon should be based on the learning objective. If the IRC's objective is to compare one malnutrition projects across contexts, it would be important to include the cost of CHW screenings as a necessary component of the new analysis. However, if the learning objective would be to inform a Ministry of Health of the standalone costs of treatment, the analysts and program staff may choose to omit CHW and screening costs.

Currently, nearly all of IRC's cost analyses are either cost-efficiency or cost-effectiveness analyses, rather than cost-benefit analyses (CBA). CBAs are well suited in comparing interventions to maximize social benefit. However, IRC research and humanitarian interventions are often focused on outcomes for crisis-affected populations. In this case, cost-efficiency and cost-effectiveness analyses are better suited to transparently inform decision making around maximizing impact per dollar spent by IRC programs.

2. Identifying Program Ingredients

To run a reliable cost analysis, it is necessary to understand all inputs required to implement a program. Consider a program as a "recipe" for producing a particular output. All necessary inputs are the "ingredients" required to make the recipe, or the program.

A "recipe" for a program is rarely the same as an award budget. Award budgets often include items used to produce many different outputs, and the inputs necessary to produce any one output may have been funded across multiple awards. Only inputs that have contributed to the output being analyzed are included in the cost analysis.

Figure 1: Awards and Outputs

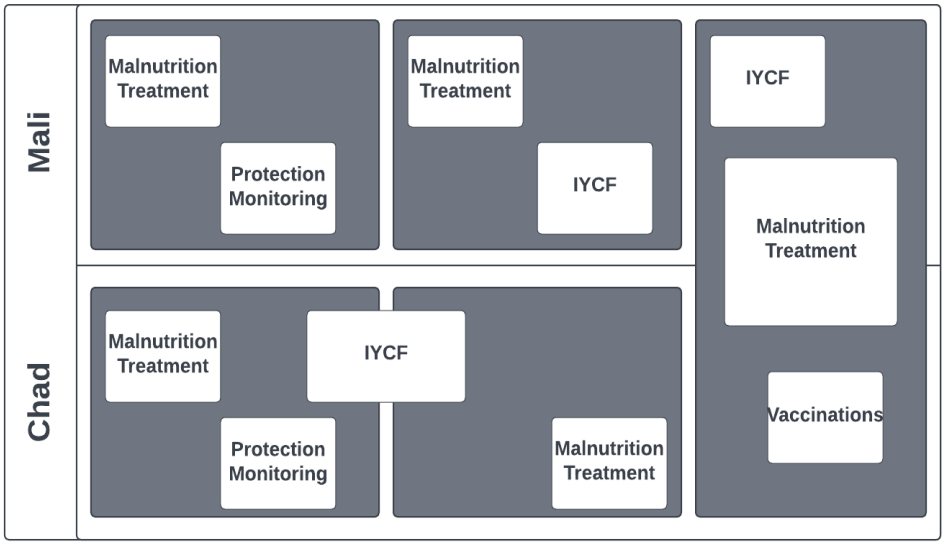


Figure 1 shows the range of relationships that one set of outputs (white blocks) can have to an award (grey blocks). Nearly all awards produce more than one program. Meaning that for programs funded by a single award, it is still necessary to disentangle the costs associated with the output in question versus the other outputs on the award. Some awards span multiple countries or field offices so costs must be further broken down based on their location as well as their output. And, most challenging, some programs are produced by resources funded across multiple awards.

For example, an IRC malnutrition treatment project in Mali was implemented using funding from five separate awards in 2021. To identify the necessary ingredients to provide malnutrition treatment in that program, one large "ingredients list" was created from five awards. Ingredients were then further allocated to represent their contribution to *only* malnutrition treatment, and expenses were filtered by the time frame of the analysis.

Sources of cost information used to build ingredients lists can take many shapes. When answering cost research questions, different types of financial documents have varying insights and limitations. The types of data used for cost analysis can be found below.

Award budgets are generated in the proposal or program design stage and offer detailed information on subcomponents of total cost (e.g., Program Staff, Travel, Supplies, etc.).

Accounting databases provide precise spending information that can be used to understand how planned spending occurred in practice. Expenditure information from accounting databases provides disaggregated primary data, reducing the chance of erroneous results. For organizations with well-developed accounting systems, individual transactions also tend to have accounting codes —e.g., general ledger category, programming sector, sub-office—which can be used as meta-data to understand the costs themselves. However, the value of this data depends on the quality of the accounting processes which produced it. Errors in coding (e.g., tagging the general ledger category, programming sector, or sub-office) can compromise the quality of analysis based on this data. Accounting data is often comprised of tens of thousands of lines of transaction-level data per program, which is infeasible to go through individually for cost analysis. As a result, IRC analysts and

finance staff track each individual expenditure to award budgets using unique codes for each budget line item. Each expense is then mapped onto the appropriate codes so that the IRC has an accurate sum of spending for each budget item.

Time and Effort data collection captures how staff spend their time across activities. Personnel are a major cost for most programs; therefore, the accuracy of a costing exercise significantly improves when staff time and resources are tracked specifically to the activity or program being analyzed. Awards typically capture staff time down to the level of funding sources and not to the level of activities *within* a project. Time and effort tracking at the activity-level requires a time investment from program staff. At IRC, most cost analyses capture one-time retrospective estimates of time allocation across activities based on conversations directly with program staff. For cost-effectiveness analyses, time and effort allocations are captured at regular intervals throughout implementation by holding 30-minute or 1-hour calls with program staff.

Country operating budgets provide insight on how country-level management and shared costs are used within a given country. While donor constraints often dictate how much funding can be used for overhead or infrastructure, country-level operating budgets capture the resources incurred to run country operations, regardless of the sector or program. Shared costs from awards are included proportional to the percentage of direct program costs included in the analysis, discussed below.

Program Ingredients are the inputs used to achieve the desired output. Ingredients typically match the lines of award budgets but can be either more specific than budget line items or include non-budgeted items. For example, a table of program ingredients can include goods donated in-kind which may not be captured within tracked expenses. In addition, the cost analysis can break down budget line items into multiple ingredients or combine lines to suit the needs of the analysis. These decisions should be based on the final learning objective of the cost analysis and to ensure all expenses are tracked and matched to each ingredient.

In addition, knowing the total cost of each ingredient, the unit costs and units needed for each of the ingredients provide valuable insight into which resources drive total program costs. This level of detail is necessary for two reasons. First, breaking down the cost components ensures the analyst has included only the necessary program ingredients. If the number of units used is not counted, it is difficult to know whether the entire reported expense, or just a portion, was included. Second, details enrich analyses by providing greater insight into why cost-efficiency or cost-effectiveness varies across programs.

For example, if all cash transfer programs tend to cost more per dollar transferred in the Middle East than they do in central Africa, more questions into the underlying numbers naturally follow. Is this because the cost of salaries is higher in the Middle East, or that programs require more intensive management, or that the value of transfers is smaller in central Africa? Understanding cost components-unit cost and units needed can help address these questions.

Direct Project Costs

Direct project resources, or required resources, for program implementation can be straightforward to calculate. For example, consider the total cost per vaccination provided at a health clinic. A key ingredient is the cost of the vaccine itself. The IRC's budget will reflect the unit cost per vaccine and the number of vaccines purchased. Multiplying them together will provide the total cost of that input. The

total cost should also match expenses tracked against budget lines throughout the course of the program.

In addition to obtaining the total cost of an ingredient, it is necessary to allocate a percentage of the cost to the output analyzed. While some resources are fully used to achieve one output, other resources may support multiple outputs. This is particularly important for staff who work on many projects. Cost analysts must understand what percentage of staff time and resources contributes to the activity or program being analyzed. For example, a MEAL specialist may support data quality across multiple health projects at the same time. Determining the percentage of a resource that should be included in an analysis, or an "allocation", requires engagement between analysts and field staff to discuss each ingredient and allocate percentages of time and effort spent to each line.

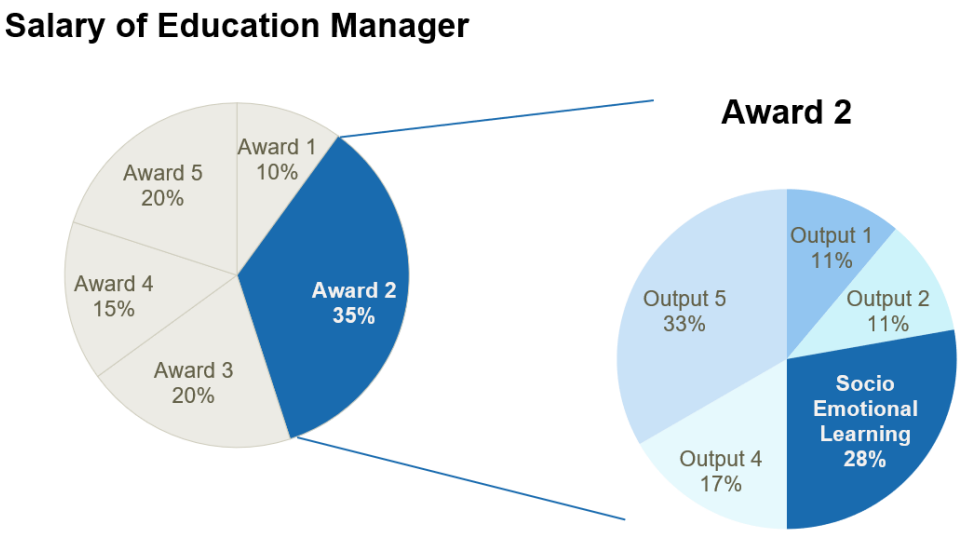
$$Cost\ of\ Ingredient = Unit\ cost\ \times Units\ Needed \times Percent\ of\ ingredient\ allocated\ to\ output$$

OR

$$Cost\ of\ Ingredient = Total\ Expensed\ to\ Ingredient \times Percent\ of\ ingredient\ allocated\ to\ output$$

To calculate staff salary ingredients, it is necessary to understand how many awards staff salaries are spread across and which award funds the work being analyzed in a cost analysis. If a staff member contributes to multiple outputs in each award, only the proportion of their time that is used for the output in the analysis is included.

Figure 2: Staff Allocation Example



Consider **Figure 2**, which provides an example of how an Education Manager's salary would be allocated for a Social-Emotional Learning (SEL) program. The Education Manager's full salary is funded by five awards. However, their time on the SEL program is covered entirely by Award 2, which comprises 35% of their overall compensation. Under their time charged to Award 2, only 28% of their time is spent on supporting SEL. As a result, the allocation would be 28% of the cost charged to Award 2 for the Education Manager to the SEL program. This is 9.8% of their total salary.

Note: The IRC does not include research costs in their cost analyses. The goal of the analysis is to capture the standard costs of implementing the program and including research costs would inflate the total cost of the program. Research costs are removed from the analysis and may include activities such as staff time dedicated to research activities or enumerator training on research. However, monitoring and evaluation costs that would be included in standard humanitarian programs outside of research are included in cost calculations.

Shared Project Costs

Country-level shared project costs, or "support costs", are frequently spread across all active awards within a country. Shared project costs are resources that are necessary to implement and support humanitarian programs regardless of what program is being implemented. Shared project costs include items such as human resources staff, award managers, and country office rent.

The IRC currently uses a single allocation rate applied to all support costs within an analysis. To ensure consistency across our analyses, IRC allocates shared project costs to an analysis by taking the percentage of all direct project costs relevant for the specific activity costed, as a proportion of the total direct project costs charged on that award in the same time frame:

$$Allocation\ \%\ for\ Direct\ Shared\ Costs = \frac{Allocated\ direct\ program\ costs\ in\ analysis}{All\ direct\ program\ costs\ in\ grant}$$

This method assumes that the proportion of direct program costs allocated to the output in question compared to other outputs is an accurate proxy for shared project costs. This method is used instead of allocating indirect project costs to a single program. For example, Country Directors do not work on direct programming but are necessary for a program office to run, so a portion of their time should be included in the analysis. This calculation allows us to include a portion of their indirect time.

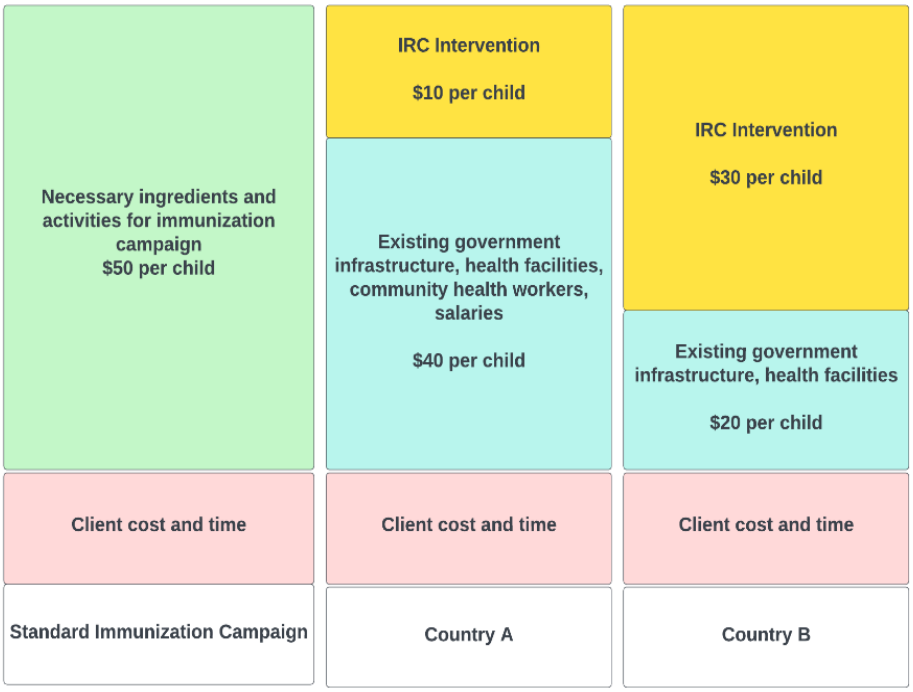
3. Costing External Cost Categories

The IRC often works with partners and governments to integrate programming into existing social protection mechanisms and the infrastructure of national governments. As a result, it is important to understand the costs to all stakeholders to better compare across programs. Depending on the cost question of interest, the IRC may perform an analysis of other costs incurred by partners, governments, and clients. If costs to these stakeholders are not included in the analysis, there is a risk of under-resourcing future projects or pushing necessary costs onto other actors in the humanitarian system. In addition, costs to the IRC differ across contexts due to the range of social services and government infrastructures across countries.

For example, the IRC runs, staffs, and supports the medical facilities in certain camps in the Dadaab refugee complex in Kenya, paying for all staff and medical supplies. However, in most other contexts, the IRC receives donated in-kind medical supplies for health programs. If we looked at the cost-efficiency of IRC-only costs in Dadaab versus all other contexts, we risk claiming that Dadaab is not cost-efficient when the comparison would not be fair. By failing to consider costs borne by other actors, implementing agencies may end up externalizing costs onto partners or clients.

Figure 3 demonstrates how cost analyses can differ based on the existing health infrastructure. A cost analysis that *only* looks at the IRC's costs would falsely conclude that delivering immunizations to children would be more cost-efficient in Country A than in Country B. If a government wanted to implement a project modeled after an IRC project, and planned on paying for all resources required, they would need to cost all these components to inform their decision making. The cost of client time, including financial and opportunity costs, should also be included in full social cost analyses.

Figure 3: Example of Social Costs by Country



However, analyzing the costs outside of IRC can require significant investment. While assessing the costs of a partner implementing organization may be straightforward, assessing the costs of government ingredients or costs incurred to clients can be difficult. This is because government and client costs require a substantial amount of additional data collection and interpretation, which can be expensive and time-intensive for program staff. As a result, it is important to stress that the cost analysis scope be defined by the learning objective of interest.

Consider a multipurpose cash transfer program aiming to support refugee populations. If the program of interest, and proposed analysis, is aiming to look at the difference in costs for the implementor between start-up years and subsequent years, it may not be necessary to look at other non-IRC costs. While external costs are always helpful to understand, the cost to partners or clients may not answer the learning objective and therefore may require more effort than necessary. However, if the program's cost question aims to compare the cost-efficiencies of a physical cash program and a mobile transfer program, it would be important to include the government and client costs to ensure implementing organizations are not shifting some of the cost burden onto clients through transfer fees or travel time to financial institutions.

The following subsections explain the underlying logic and math behind determining the costs borne by external agents.

Donated Goods and Services

In-kind goods and services are often provided by international organizations or governments. This can vary widely depending on the project but is most common in interventions that utilize or build on existing infrastructure or services coordinated by international agencies. Examples include the use of

government facilities such as schools and hospitals, and medical goods such as drugs and vaccines provided by UNICEF.

If possible, the cost of donated goods should be included in analyses using the standard market price. Total units used should be recorded along with any shipping and import costs. If possible, expenditure data from the provider organization should be used. However, if unavailable, costs can be modeled using client level data. For example, if expenditure data on government-provided vaccines is shared by the Ministry of Health, it would likely be the most accurate data source on actual costs. In some contexts, the cost data would be modeled using the number of vaccines provided to clients and the unit cost of each vaccine. This would be less accurate than expenditure data, as it is likely that some vaccines meant to be administered went unused and were therefore not captured in the modeled cost data.

Personnel Costs

Often in humanitarian programs, there are personnel that contribute to implementation whose labor costs are not reflected in IRC's spending records. This includes personnel such as government and partner staff, volunteers, and incentive workers. Additional data collection would be necessary to collect the compensation costs of external personnel. Time use data would also need to be captured to understand what percentage of external personnel time was spent on the activities in question.

In cases where government or partner staff dedicated specific days to the activities in question, the number of days dedicated to those services can be taken as a proportion of a work week. For example, if one health facility in Mali dedicates two out of six working days to provide malnutrition treatment, the allocation of staff salaries to the nutrition program would be 33 percent. However, if in the same project community health workers integrate nutrition services into their health outreach, a more granular allocation of staff time will be required for the analysis of one activity.

Cost to Clients

Costs borne by clients includes several components:

$$Beneficiary\ cost = Opportunity\ cost\ of\ time + foregone\ income + out\ of\ pocket\ expenses$$

Currently, the cost for clients to access services is not considered in IRC analyses unless it is necessary to answer the cost question of interest. IRC does not have regular data collection methods to track the total time clients spend on participation, lost income, travel time, or out-of-pocket expenses. Most services require clients to bear some form of financial or opportunity cost. Additional data collection would be required to accurately quantify client time and cost. Cost to client should be collected for comparison across different delivery methods that result in large financial or opportunity costs.

In the past, IRC worked with external consultants and research partners to conduct surveys focused on understanding client opportunity cost. Enumerators filled in a calendar of daily activities that caregivers performed to provide a numerical figure that was used to calculate opportunity cost per client. Through surveys, enumerators collected employment data to estimate missed wages. In many IRC interventions, services are provided where clients are not formally employed, due to their migratory or displaced status, hindering IRC's ability to track down households consistently and apply a dollar figure to their opportunity cost.

There are important considerations when presenting cost to client alongside cost to implementing agencies. While partner or donated costs may be simply added on top of IRC costs in an analysis, adding

client costs in the same manner could result in undervaluing client costs. The clients of humanitarian organizations will value each dollar differently than the organizations themselves. For example, a recent client cost analysis performed by the IRC in Mali discovered that the average caregiver cost to access malnutrition care for their child was 6 USD. 6 USD, when compared to the implementation cost of 160 USD, could be deemed a negligible addition to overall cost per child treated. However, when compared to client ability to pay, 6 USD represents 20 hours of daily wage labor.

Another consideration is how to value client time in informal labor markets. In emergency contexts, the value of clients' time who are not employed is often estimated using the daily wage rate. This rate can be misleadingly low compared to the income of formally employed clients, raising ethical concerns related to undervaluing client time. For example, a cost analysis performed in Jordan of a SEL program found the value of caregivers' time over six months to be only 10 USD based on the informal labor market. To allow for a more accurate comparison of costs across programs, it is best to present client costs separately from other cost categories.

4. Additional Costing Considerations

Discounting

It is common within public policy to account for the opportunity cost of capital (money that could have been gained through investment of capital rather than for program use) using a discount rate applied to expenses in later years. However, the IRC does not apply discounting to most cost analyses. Most of IRC's cost analyses analyze programs in one-year increments or less, which makes discounting costs back to a base year unnecessary. In addition, as grant-based organizations such as the IRC lack the ability to invest funds to generate returns over time, it can be argued they do not experience the opportunity cost of capital that a government or private company does. Many humanitarian organizations face penalties if they do not spend the awarded money within the agreed upon timeframe.

Exchange Rates

The IRC uses the U.S. Dollar (USD) as the standard accounting currency. Exchanges of unit cost and financial data use the average annual exchange rate for the year that the expense was incurred. Within cost analyses and IRC accounting, the IRC uses standard market exchange rates rather than purchasing power parity (PPP) exchange rates to translate prices into USD. While PPP allows for greater comparability across programs, they also represent the cost of programs as though they had been implemented in the United States, which dramatically overstates the real financial costs of implementation.

Inflation

Inflation is an important consideration for multi-year projects and for comparative analysis of different programs. The respective currency, unit cost, and total expense data implicitly reflect the price level of the year that the expenses were incurred and reported. For example, consider a study that analyzes cost differences between multiple malnutrition programs from 2012 to 2022. Failing to account for inflation would bias the results of the study to consider earlier programs as more cost-efficient. Two adjustments for inflation must be made to compare programs from different years. First, multi-year program expenses need to be adjusted to a base calendar year. Second, all programs within the comparative analysis need to be inflated or deflated to a base year for comparison.

The **Airbel Impact Lab**, the IRC's research and innovation team, designs, tests, and scales life-changing solutions for people affected by conflict and disaster. Our aim is to find the most impactful and cost-effective products, services, and delivery systems possible. Airbel works to develop breakthrough solutions by combining creativity and rigor, openness and expertise, and a desire to think afresh with the experience of a large-scale implementing organization. The International Rescue Committee (IRC) is committed to maximizing the impact of each dollar spent to improve our clients' lives.

For additional information on Cost Analysis at the IRC, please contact Airbel@rescue.org.

Airbel Impact Lab
Research & Innovation at the IRC

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